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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 636,226	08 10 2000	Masahiko Hirose	04558 044001	7100

7590 12 05 2001
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EXAMINER

FORTUNA, ANA M

ART UNIT PAPER NUMBER

1723

DATE MAILED: 12-05-2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,226

Applicant(s)

Hirose

Examiner

Ana Fortuna

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 20, 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above, claim(s) 6-11 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO 413; Paper No(s) _____) |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 20) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Cadotte et al (4,960,518)(hereinafter '518). Reference '518 discloses the composite polyamide membrane including a porous support and a thin layer of polyamide formed by reacting an aromatic amine and a polyfunctional halide compound (column 2, lines 66-68, column 3, lines 1-66). '518 further discloses treating the composite polyamide membrane with an oxidizing agent containing bromide, e.g. N-bromoamine (column 5, lines 5-19), therefore resulting in a polyamide composite containing bromide and in which bromide is provided in the skin after the formation of the composite membrane as claimed in claims 1-2.

3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurihara et al (3,993,625)(hereinafter '625). Reference '625 discloses the composite membrane having the a polyamide skin on a porous support, the polyamide is aromatic and made from interfacial polymerization of phenylenediamine with a polyfunctional acyl halide (column 1, lines 5-15, column 2, second paragraph, column 6, lines 29-68, column 7, first paragraph, column 8, lines 30-

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36, and column 9, lines 12-13). Treating the membrane by rinsing with an inorganic salt, e.g. lithium chloride, calcium chloride, lithium **bromide** (column 10, lines 19-46, column 11, lines 6-50). The addition of inorganic salts, e.g. lithium bromide, during or after polymerization and its effects in the membrane modification is also disclosed (column 9, lines 55-68, column 10, line 1, column 11, lines 15-18). Since the membrane is posttreated with the lithium bromide, the resulting membrane is a composite polyamide containing bromide, as disclosed by '625.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cadotte et al (4,960,518)(hereinafter '518). Reference '518 discloses the composite polyamide membrane containing bromide, as discussed above. The composition in terms of (Br/N) as claimed in claims 3, and 7, is not disclosed, however, adding from 0.1 to about 1 % of the oxidizing reagent or bromide containing compound, e.g. N-bromoamine, to the aqueous solution used for posttreating the composite crosslinked polyamide membrane is disclosed (column 5, lines 38-53). The polyamine composition from 0.01 to 10 % is also suggested by the incorporation by reference of Cadotte (column 6, lines 51-61), of record. Therefore the ratio of Br/N can be calculated as 1.

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e.g. or lower by adjusting the amine concentration and Br component concentration within the suggested levels. It would have been obvious to one skilled in the art at the time the invention was made to select an amine and oxidizing agents within the ranges suggested by '518, and in particular amine levels lower than 2 %, e.g. to control membrane thickness and membrane flux improvement. As to claims 4-5, the membrane as suitable for isopropyl alcohol rejection and having a high degree of rejection of the (IPA) is disclosed by '518 (column 2, lines 52-62). It would have been obvious to one skilled in the art at the time the invention was made to expect a high IPA rejection for the membrane and to control operation conditions to achieve an adequate rejection, as conventional in the art. Reference '518 teaches the suitable temperature, pressure conditions and rejection of the treated membrane. Specific process operations for the IPA filtration are not disclosed, however, the claims are directed to the product and not to the process, adjusting the process conditions by selecting the parameters suggested by '518, or adjusting this parameters according to the feed concentration of alcohol and the particular feed will be within the knowledge of the skilled in the art at the time the invention was made.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for regular responses, and (703)872-9311 for after finals.



ANA FORTUNA
PRIMARY EXAMINER

Ana Fortuna

November 29, 2001